

## Fiber-Optic Early Warning System

### PHASE III IMPACT

- 25 units sold to date, generating \$1,837,266 in sales.
- Anticipate sales of over \$97.5 million by delivering up to 1500 fiber-optic delay units for the AIEWS Program.

Advances in fiber-optic and Monolithic Microwave Integrated Circuit (MMIC) technologies have made fiber-optic delay lines a viable alternative to the traditional methods of microwave signal delay for improved dynamic range, signal linearity, power consumption, physical size, noise performance, and ruggedness. As a result of its Army Phase II SBIR project, Custom Microelectronic Systems, Inc. (CMS) has developed an integral component for the Navy's Advanced Integrated Electronic Warfare System (AIEWS) involving the delay of microwave signals from 2 to 6 GHz. The custom modules developed by CMS support three channels of 3000 nsecs delay each in a very compact, easily replaced assembly. AIEWS is a new low noise, high performance early warning detection system that is being developed by Lockheed Martin for the U.S. Navy. The AIEWS system could be installed on over 150 ships over a program life of 20 years for a total program value well in excess of one billion dollars. The initial research and development contract was to deliver 20 fiber-optic delay lines for the development of two complete demonstration systems.



Fiber-optic delay lines with these performance capabilities may also find application in radar warning receivers, moving target indication radars, timing control for multiple antenna systems, path delay simulations in radar and communications systems, and phase-noise discrimination measurement systems.